

From owner-qrp-1@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: rohrwerk@netcom.com (John Seboldt)
Subject: [9946] A MiniR2 based rig completed
Message-ID: <199606160155.SAA10302@netcom12.netcom.com>

Just finished a 40/20 meter CW rig based on the miniR2 receiver. It's all dead-bugged in a 2.25 x 4.75 x 7-3/8 Hammond aluminum box, and my resolution was to make more use of available parts rather than make another DigiKey order... so did lots of capacitance/resistance measuring with some 1% standard parts I had on hand for the phasing networks. My matching of the similar values might be better than 1 percent, so the phasing nets may be pretty good!

Not too bad on compactness, though someday I might rebuild it smaller (had bad luck trying to build too small last time)... 4 watts on each band... about 900 mA TX, 50 mA RX... still puts out 2 watts at 10 volts... CW or "broad" filter... and vacation begins today, with a little Field Day activity next week from the woods!

See you on the air...

: John Seboldt \ Duke Ellington on CW: It don't mean a thing
: rohrwerk@netcom.com | Ham: K0JD \ If it ain't got that swing!
: Minneapolis, MN USA | Music Dir., \ Didah, didah, didah, didah,
: Church of the Annunciation \

From owner-qrp-1@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: herr@ridgecrest.ca.us (Michael Herr)
Subject: [9926] Adventure Radio canoe trip
Message-ID: <v01530501ade8ddac9c92@[199.120.150.93]>

Hello Gang,

I'm heading out on a canoe trip with my son's Boy Scout Troop. As always, planning to take along the trusty NorCal 40 and do a little operating along the way. So, I'm looking for contacts and something a little more. I would like to be able to dump, via 40 meter cw, a daily digest of events with the troop. I would like to send this not only to QRP-L, but also to several of the troop's familys, keeping them informed as to the fun we're having and their not! So I am looking for volenteers that can pass along the "mail" when (and if) they hear me. Any takers? Below is a short trip outline.

72

Mike WA6ARA

Who: BSA TROOP 3 RIDGECREST CALIFORNIA

Where: HOOVER DAM TO COTTONWOOD COVE

Why: 50 MILER CANOE TRIP

When: JUNE 28 through JULY 5 OR 6TH*, 1996

*dependant upon various kinds of conditions such-as weather, people, etc.

PARTICIPANTS

About 17 total, including three hams, WA6ARA, KE6RCW and KA7ULQ and the canoe guard dog

ITINERARY

FRI, 28 JUNE

Depart Ridgecrest

Arrive at Boulder Beach Campground

SAT, 29 June

Launch and visit Sauna cave

Camp at Arizona Warm Spring

SUN, 30 June

Camp at Lonesome Wash Cove, rattlesnake watching

MON, 1 July

Camp at Fire Mountain Cove, listen to the Burros and the Coyotes

TUE, 2 July

Camp at Antelope Cove, watch those Scorpions

WED, 3 July

Camp at Arizona Bay, star gazing

THUR, 4 July

Camp at Cottontail Cove, hot showers

FRI, 5 July

Land at Cottonwood Cove, retrieve vehicles from Hoover Dam

Home

Campsites are approximate. Actual campsites will depend on crew condition, weather and winds, and whether we find a better spot earlier. If we hit bad weather or strong head winds, departure from the river will be one day later on July 6th.

From owner-qrp-l@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: launerb@crl.com (William H. Launer)
Subject: [9943] Antenna Article
Message-ID: <v01520d00ade8b7d38abf@[192.0.2.1]>

qrp-l gang

There is an article in the June 6, 1996 issue of EDN Magazine titled "Antennas: critical links in the wireless signal chain". It seems that the wireless digital people have suddenly realized the need for antennas in their endeavors! Although it's pointed at 900 MHz, it contains some good generic information on dipoles, loops, vswr, etc. that apply to antennas for any frequency. If you have access to the Magazine, it's worthwhile reading.

The author starts out: "A communications chain is no stronger than it's weakest link. The right antenna can strengthen the chain by yielding better signal coverage, increased S/N ratio, reduced bit error rate, and lower power consumption - all at very low cost." Sounds a lot like qrp operational goals!

72/73 - Bill wb0cld

Bill Launer
St. Charles, MO
launerb@crl.com
wb0cld@wb0cld.ampr.org [44.46.66.25]
qrp-l #279 qrp arco #3551

From owner-qrp-l@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: Dean Marzocca <n2tnn@ifu.net>
Subject: [9925] antennas
Message-ID: <31C237B5.4E02@ifu.net>

Hi gang,

I am new on the listserv but must say the reading is very interesting. I have been into qrp for a while but not seriously because of antenna problems. I understand the dipole and G5RV setups but I cannot get a vertical to work. I have a Hustler 40 meter vertical. How can I attach the ground radials to get a swr to work with?

I have read the "hamsticks" but don't know much about them. Any comments will be appreciated. The qrp will be much more enjoyable if I can get out of the shack and portable in the field. That is something I still haven't done.

BTW just worked WIS on 3 watts. # 1 qrp contact.

Tnx es 72, Dean

From owner-qrp-1@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: wa5whn@ix.netcom.com (Jay Miller)
Subject: [9939] ARRL Field Day, 1996/New Mexico
Message-ID: <199606151708.KAA10908@dfw-ix1.ix.netcom.com>

Dear QRP Compadres,

June 22 & 23, K8BI, WB5LYJ, 1 English Short Hair Pointer & myself (WA5WHN) will be at the following Latitude & Longitude;

Lat. 36 degrees 02' 5.5 " N
Long. 106 degrees 50' 1.0 " W

altitude 9,200 feet above sea level.

All power will be from 3 deep cycle batteries & a 36 watt solar panel. One Icom IC-706, Yaesu FT-747 & OHR Explorer, plus VHF gear. We will have a line of site view of Albuquerque. We will probably be WA5WHN, 1A or 1B (undecided), NM. 2 Wire Beams (20 & 40 meters of course) & 1- 80 meter Windom. N5ZGT had informed us that the ARRL said if STS-78 is up & we work them, it counts as a Satellite contact.

The location is approximately 2 miles east of San Gregorio Lake, which is 14 miles east of Cuba, NM. The US Forest Service (Cuba Ranger Station) was informed that we would be there & we would report any forest fires, since we have a great view, 360 degrees. They were delighted to have the extra eyes available & wanted to know if we had their Fire Dispatch (24 hours) center phone number. This site is in some pretty tough terrain. This site has 100 feet Ponderosa Pines. The US Forest Service had asked us to stop in Cuba, NM (Yes, there is a City in New Mexico called Cuba.) at the Ranger Station to drop off a Map as to where we will be, in case we call in a Fire/Hazard emergency. Who knows ? This one could be a real emergency. 4 years ago, I do remember a Sunday morning, on Field Day, when WB5LYJ was working a few Calif. stations on 40 meters SSB, and a Bay Area Station had asked us to standby for emergency traffic, since they just had an earthquake. Hmmm, never can tell.

Let's have FUN ! But remember, what the real purpose of this event is. Take pictures ! Oh, and don't forget to check 10 meters too.

de WA5WHN K

From owner-qrp-1@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: wb2vuo@juno.com (William K Hibbert)
Subject: [9940] BARK QRP Field Day
Message-ID: <19960615.140002.7359.0.wb2vuo@juno.com>

The Brockport Amateur Radio Klub, operating with the Klub Kall, KB2UFY, will be operating in the 5A/Battery class for Field Day from the WNY section this year. We will be active on 160 - 2 Meters, with a Novice/Tech station operating under the call N2TUK.

The operation is being organized by the Band Captains, KF2XC, John, on 80 Meters, KE2DI, Keith, on 40 Meters, KF2JC, Duane on 20 Meters, Lou, KA2DQA, on 15 Meters and Ev, WB2ELB, on 160 and 10 Meters. Andy, N2TUK (Who has YET to upgrade...) will honcho the Novice/Tech station.

The gear will range from Argonaut 509's, Argosy's, Scouts, Alinco DX-70T's and Kenwood TS-690's, all running at 5 or less watts. Antlers will range from simple Inverted Vee's to Bobtail Arrays.

Our location will be on the shores of the Black Creek, 43-deg,9-min North/77-deg,58-min West in Grid Locator FN13ad. For you County Hunters, we are operating from Genesee County, NY...

Power will be a combination of Solar and Storage batteries with the main power from a recycled Forklift battery, consisting of (16) 10,000 A/H cells, tapped for 3 separate 12V/10,000 A/h batteries. Of course, once Ron,N2TLX parks the truck with this Monster, he's walking the rest of the weekend!!

We will be looking for everyone on Field Day, and we will be "Usually Found Yakking" near the center of the band(s)...

72/73, Keith, KE2DI (at least until my Vanity Call application gets me my Old call back)

From owner-qrp-1@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: w8iqb@tir.com (w8iqb)
Subject: [9938] Chuck & F3NB
Message-ID: <199606151528.LAA06664@sun.tir.com>

Chuck,

You wrote in part: [Heard F3NB, Andy, whom I keep hearing on 30M

and 40M for years but he has yet to hear me. :-)]

I hate to tell you this but I worked Andy a few years ago on 30M to earn my first 1000 mile/watt award! Keep trying, he does have good ears.

72/73, Lowell KD8FR

```
*****
Lowell D. Corbin, KD8FR   President: Michigan QRP Club
3315 Sheffer Avenue      MQRP #339  QRP-ARCI #6126  GQRP #4383
Lansing, MI 48906-2453   NorCal #493  QRP-L #312
(H)517-886-9815          E-Mail: KD8FR@AOL.COM
(W)517-885-9243          w8iqb@tir.com
*****
```

From owner-qrp-l@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: Paul Erickson <paul1@wizard.ucs.sfu.ca>
Subject: [9945] FIELD DAY '96 British Columbia
Message-ID: <9606152158.AA24882@wizard.ucs.sfu.ca>

Hi Everyone,

Please listen for VE7NSR. We will be operating from Cypress Mountain. I will be putting in the first 4 hour shift on CW. They placed first in Canada last year in the 1A category, and we are looking to repeat this year as well. The location is great and the V beam plays well. Afterwards I will be helping out with the qrp demonstration... someone has to hold up the cw end of things... unfortunately most of the local qrp activity is on SSB... can't seem to get some people to give up their pacafiers ;-)
(Darry is going to kill me 8-))

We will be trying to keep the q rate up, but if you sign /qrp I'll try to get you in the log. If you connect in the second 4 hours say hi to Brian. That weekend will be sixty years to the day since his first Field Day. He has forgotten more about CW than I will ever know. As an ex RAF intelligence officer he knows what it is to know he was talking to the right agent by their fist, also if you work him some other time ask him about the Italian cw accent. His call is VE7QH.

Hope to work you all.

cheers, Paul
ve7cqk
email: paul1@wizard.ucs.sfu.ca

From owner-qrp-1@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: Scott Rosenfeld NF3I <ham@w3eax.umd.edu>
Subject: [9936] FS: Dust cover for Century 21
Message-ID: <Pine.3.89.9606150613.B26726-0100000@w3eax.umd.edu>

A rare bird indeed! I was at a hamfest maybe 5 years ago when I picked up a vinyl (in the package) dust cover for my Century 21.

Some time later, I must've thrown away the package, and then sold the '21 but stuffed the dust cover in y "Ten-Tec hanging file" along with all my other Ten-Tec manuals, price lists, etc.

I remember "Covercraft" to be the manufacturer, but...

The cover is basically clear, textured, stitched vinyl. It's hardly been used and I don't have (nor plan to get) another C-21.

While in the drawer, one portion of the top surface pressed up against a piece of laserprinted paper and transferred slightly. I rubbed most of this off, but since the surface is TEXTURED it still shows a little.

No matter, of course, since the top of the case is black.

Interested? Offers? Thanks! It will do someone well.

* Scott Rosenfeld NF3I Burtonsville, MD FM19 QRV 80-10/6/2/440 *
*** 6m 64 grids worked on 8 watts ** HF 138 cfmd * QRP-L #147 ***
** QRP ARCI #9054 ** DXCC/WAS/WAC ** 100% dipole powered HF/6m **
* 301-549-1022 h / 301-982-1015 w * 145.490- 147.225+ PL 156.7 *

From owner-qrp-1@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: "Phil, AC6LS" <ac6ls@amsat.org>
Subject: [9934] green radio ID help please..
Message-ID: <31C2819A.3A80@amsat.org>

can anyone help with more info on the following radio

US. military

Receiver-Transmitter
Radio RT-209/PRC
Serial NO. 581
MOTOROLA INC
order no. 08709-PHILA-55-93
US

Knowing that it is military, it is most definatly QRP.

Makes me think about my military service,
I was doing QRP and didnt even know it ;-)

Any info would be helpful, even if it is another source to
goto..

thanks for the BW, 72 de Phil AC6LS

From owner-qrp-l@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: k7yha@juno.com (Richard H. Arland)
Subject: [9931] K7YHA 1996 N. American Tour
Message-ID: <19960615.072657.4631.0.k7yha@juno.com>

We on our way! (Only 1.5 hour late...but were movin')

Shud be in the Raleigh, NC area in about 12-13 hours.

7040 KHZ is the place. Be there or be square.

Hope to work the max amount of QRP-L interneters.

Look for us as N6GA at the Zuni FD.

72 73 to all

rich k7yha

From owner-qrp-l@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: Joe Everhart <n2cx@voicenet.com>
Subject: [9948] NEQRP Club Project No 3
Message-ID: <199606160321.XAA27942@mail.voicenet.com>

New England QRP club members:

Look for a review of the NEQRP QRP Afield 20-30 Potabel PVC mast kit in the July issue of 72. This kit is the third club kit to be offered and was announced in the April 72 - bad timing perhaps!

The mast is a handy, lightweight 20 foot PVC pipe mast that breaks down into 5 foot sections for easy storage and transport - you can probably get a 5 foot mast *inside* your car! It can easily be erected in 15 minutes and is intended as the center support for an inverted vee dipole in a temporary setup such as Filed Day, QRP Afield, QRP Afield or any other quick-up/quick down portable setup.

The semi-kit contains all hardware, a 20-plus page illustrated manual describing mast assembly and usage and 100 feet of wire and the insulators for a PVC Gusher dipole antenna. The semi-kit is sold by NEQRP for only \$15.00. Shipping by Priority mail is included. The user must provide the PVC pipe (can be gotten at almost any hardware store in the US), some light duty guy line and three tent pegs. These additional items should cost (much) less than \$15. So you can make a *20* foot mast for less than *30* dollars!

The first 30 kits are reserved for NEQRP members. Ordering info was given in the April issue of 72a and will be printed again in the July issue.

After August 1, the mast kit will be available to anyone, NEQRP member or not. More info will be sent on qrp-l as that date approaches.

I *do* have an interest in the mast kit - I came up with the idea! However all proceeds from the initial offering go to NEQRP who commissioned the kit.

72/73,

Joe E., N2CX

work: jeverhart@cayman.vf.mmc.com
home: n2cx@voicenet.com

From owner-qrp-l@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: "Kerry W. Miller" <kmiller@flash.net>
Subject: [9937] NorCal 40A mods?
Message-ID: <2.2.32.19960615134014.0068f834@pop.flash.net>

I just started building a NorCal 40A last nite, does anybody know of a site

to download mods like was just compiled for the 40-9er? I think I'll get it working like the book first, but I already see some things I'd like to do with it. No use re-inventing the wheel!

73,
Kerry

```
      \\\  
      (  )  
      ( oo )  
|-----oo00--()--00oo-----|  
| Kerry Miller                      Royse City, TX |  
|                                     WD5ABC         |  
|-----|  
                    kmiller@flash.net
```

From owner-qrp-l@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: nwqrp@scn.org (SCN User)
Subject: [9944] NWQ Newsletter for June 1996
Message-ID: <199606151947.MAA27055@scn.org>

QRP-L Gang,

The June 1996 NWQ Newsletter is now online!

To get it sent directly to you E-mailbox, send a request to billt@juno.com worded any way you like.

* Or better yet, see our WebSite at ...

<http://www.scn.org/IP/nwqrp>

You can also find zipped archives of the NWQ Newsletter as well as photos from last years FD and the QRP Companion program [qrppal.zip](#) which contains logging programs custom made for QRP contests!

--Brian, KV9X

--

works 160mtrs to 455 mhz to 250 watts.
72,
Bill, K5ZTY
ps; my apologies to Mike for the poor drawing.

From owner-qrp-1@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: "Phil, AC6LS" <ac6ls@amsat.org>
Subject: [9935] RF sampling circuit???
Message-ID: <31C2826A.9B8@amsat.org>

Am in need of a RF sampling circuit for hooking up a Freq counter.

I know that BIRD makes one but there should be a cheaper way, not to mention making one in the true Home Brew spirit!

thanks, 72 de Phil AC6LS

From owner-qrp-1@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: Wayne Barnhart <wayneb@on-ramp.ior.com>
Subject: [9928] Re: antennas
Message-ID: <Pine.LNX.3.93.960614221911.20181A-1000000@on-ramp.ior.com>

I am not sure I totally understand your question. Basic vertical construction is that the center conductor connects to the radiator and the shield connects to the radials which should be grounded (earth). Cut the radials to something like 32 ft. Put 4 to 18 down and you be in business. There are those who will tell you what you "must" have to make a vertical work but my experience tells me that any vertical will work, its just that some work better than others :)
Good luck...

Wayne WB7WHI
Spokane, Wa.

On Sat, 15 Jun 1996, Dean Marzocca wrote:

> Hi gang,
> I am new on the listserv but must say the reading is very
> interesting. I have been into qrp for a while but not seriously because
> of antenna problems. I understand the dipole and G5RV setups but I
> cannot get a vertical to work. I have a Hustler 40 meter vertical. How
> can I attach the ground radials to get a swr to work with?

From owner-qrp-1@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: "David D. Meacham" <ddm@datatamers.com>
Subject: [9949] Re: Coax
Message-ID: <Pine.LNX.3.91.960615201926.13852C-100000@dt1.datatamers.com>

Ron,
Use RG-213/U for half-inch coax and RG-58C/U for 1/4-inch coax. Don't buy it if it says RG-213/U "Type". The RG numbers are the old (still used) MIL-SPEC numbers, so any brand having the RG number printed on it is supposed to be good. Examples are Belden, Times, etc.
72, Dave, W6EMD

From owner-qrp-1@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: "Bruce C. Williams" <n9jcv@wwa.com>
Subject: [9927] Re: CW Crystals
Message-ID: <Pine.BSD.3.92.960615000342.26560A-100000@shoga.wwa.com>

Wes, I once ordered from CW Crystals. As I remember it took about 3 or 4 weeks to get the crystals. I do not believe the man has taken your money and run. He is an older gentleman, and he and his wife work slowly grinding and packaging the crystals. His prices are substantially below Jan or other vendors, and if you can wait I am sure you will be happy with the crystals. All of the crystals I ordered were exactly the freq specified and all work flawlessly.

I also sent him a note, like you did, but this even further slows him down as he now has to send replies to letters.
I am in no manner connected to this business. Just a satisfied customer.

Bruce N9JCV Norcal #359

On Fri, 14 Jun 1996, Wes Spence wrote:

> Help!! I sent an order to CW Crystals for more crystals for my 40 meter
> "Spider" Transceiver--they cashed my check, but never sent the xtals. I
> sent a letter about this and it went unanswered. Any help (there is no
> phone listing). I am looking for FT-243 40m xtals (especially 7023 KHZ)
> Thanks, Wes AC5K
> ac5k@ih2000.net
>
>

From owner-qrp-1@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: "Phil, AC6LS" <ac6ls@amsat.org>
Subject: [9932] Re: FD Tips
Message-ID: <31C27674.706D@amsat.org>

James M Fitton +1 508 960 2577 wrote:

> Someone was asking for Field Day tips....
>
> #1 tip : Go on FD with your QRP Club !
>

Could you just imagine, just half of NorCal or ARCI getting together for FD!!!! talk about a logistics nightmare :-)

just food for thought.

72, de Phil AC6LS

From owner-qrp-1@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: "Phil, AC6LS" <ac6ls@amsat.org>
Subject: [9933] Re: Painting Aluminum Enclosures
Message-ID: <31C278BB.5019@amsat.org>

Steve Bornstein wrote:

> The method I use is to first scrub the aluminium with a Scotch Brite pad and
> a cleanser such as Comet. If you are fussy the next step is to treat the
> aluminum in Alodine (sp) available at most automotive paint suppliers. This
> preps the metal. Lastly apply paint in light coats.
>
> 73, Steve K8IDN QRP-L #331

Belive it or not, this is almost verbatim, as to the method we use to prep. parts for repairs on the commercial airliners. care must be used with alodine, dont expose the Al to it too long and rinse well afterwards with water. After rinsing, let the part(s) dry thouroughly (sp) before handling.

good luck, 72 de Phil AC6LS

From owner-qrp-1@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: dgf@netcom.com (David Feldman)
Subject: [9924] Re: Ten Tec QRP rig prices
Message-ID: <199606150408.VAA21084@netcom21.netcom.com>

>Don't forget the 525 Argosy and 525D Argosy II ! While bigger , they are
>great QRP rigs, and use early Omni filters I believe. How many of these were
>made ?

>
>
>72 Paul WA9PWP
>95/96 Foxhunt co-champ (Argosy II)

And don't forget that there were TWO versions of the analog 525 - altho both
are called 525, they are different internally to some extent - at least they
DON'T have compatible noise blanker modules.

73 Dave WB0GAZ dgf@netcom.com

From owner-qrp-1@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: pcw12@ix.netcom.com (Phil Wheeler)
Subject: [9929] Re: The Threat to QRP
Message-ID: <199606150553.WAA16152@dfw-ix12.ix.netcom.com>

Hey, Max conclude we are all masochists here!

More seriously, these notes have bouyed my spirits. Finished my NC-40A/KC-1
rig about 5 days ago. I've operated it about two hours on 40m in the past
two nights. No *real* qso's ... tho I did get a comeback from a VE7 (NOT
QRP on that end!) who I lost; not a bad haul (I'm in the L.A. area), but
still no qso yet.

I was getting discouraged (switched from dipole to G5RV, checked to make
sure TX/RX offset is OK ..Yes..., etc.).

Now, looking back thru the logs, I find the last time I had a 40 meter *qrp*
contact was as a DL7 in 1977 with an HW-8 in Bremen (recent stuff all on 20m
with 5 watt OHR-400). Max range was about 800 mi on 40m meters in
fall-winter months; max range overall was into Russia at about 2100 mi -- on
15m (15 meter dipole at about 60 ft up). Of course, from DL7 land you can
work 27 countries (I did!) with no real DX!

Soooo....maybe I'm expecting too much, too soon! Thanks for putting some
reality into my expectations!

Phil W7UOX (ex-W6TUH), member of TRW ARC, by the way.

From owner-qrp-1@Lehigh.EDU Sat Jun 15 23:07:06 1996
From: nu6u@w6trw.ampr.org
Subject: [9930] Re: The Threat to QRP
Message-ID: <18686@w6trw.ampr.org>

Hello Phil,

Thanks for the nice note, and great on getting the NC40A/KC1 up and running. Well band conditions have not been the greatest lately, but I usually manage some short haul stuff on 40 meters; without too much trouble. I use a 102' center fed wire, and run 450 Ohm ladder line all the way to my tuner. The antenna is only about 30 feet above ground, so it's primarily a short haul system on 40. It seems to work the western states pretty well, and with good conditions I have been able to get into Alaska without much trouble.

I guess we still have a way to go before we can enjoy some decent sun spot numbers, but I find that 17 meters does fairly well from time to time also. Anyway Phil, thanks for the note, and perhaps we will bump into each other on the air sometime....BTW, I work at TRW, and I'm also a member of the TRW ARC; although I never show up at any of the meetings {smile}. I also work with a Young Engineer named Ken Wheeler, and I was wondering if you might know him?

73/72

de max (nu6u)